6 Domestic and External Debt

6.1 Overview

Country's total debt and liabilities stock (TDL) rose by 10 percent YoY in FY07 to reach Rs 5,023.6 billion (see **Figure 6.1** & **Table 6.1**).

However, despite this increase in the TDL stock, the ratio of total debt and liabilities to GDP continued to decline that shows country's improved debt repayment potential (see **Figure 6.2**). The falling TDL to GDP ratio clearly shows that country is moving on a sustainable debt path.

In this respect this is worth mentioning that the TDL to GDP ratio for FY07 remained significantly below the target of 60 percent set for the country in the " Fiscal Resposibility and Debt Limitation Act 2005" to be achieved in FY13. Further, the ratio of debt servicing to total revenue also continued with the trend improvement witnessed since FY01.

The major causative factors for the increase in stock of TDL were rising level of country's current account deficit and a large fiscal deficit that raised the financing needs of the country. Resultantly, the domestic and external debt both recorded substantial rise of 11.9 percent and 8 percent respectively during FY07 with domestic debt having a slightly higher share in the total TDL stock. Another significant development is that the share of short term debt continued to rise, reaching 43 percent during FY07.

This risk posed by trend increase in the share of short-term debt is reflected in the rising burden of debt servicing for the country (see **Figure 6.3**). This rising share has also caused the ratio of short term debt servicing to total revenue to increase.

An encouraging development in FY07 is the fact that a large share of the TDL stock was contributed by fixed rate loans inflows during FY07 (see **Figure 6.4**). The larger (87.7 percent) share of these fixed rate TDL was contributed by domestic inflows, as most of the external debt inflows were on floating rates.

Figure 6.1: Trends in Total Debt and Liabilities

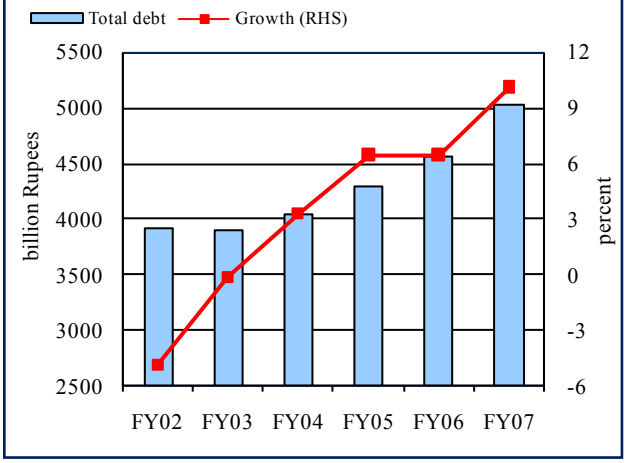


Figure 6.2: Total Debt & Liabilities/ Servicing

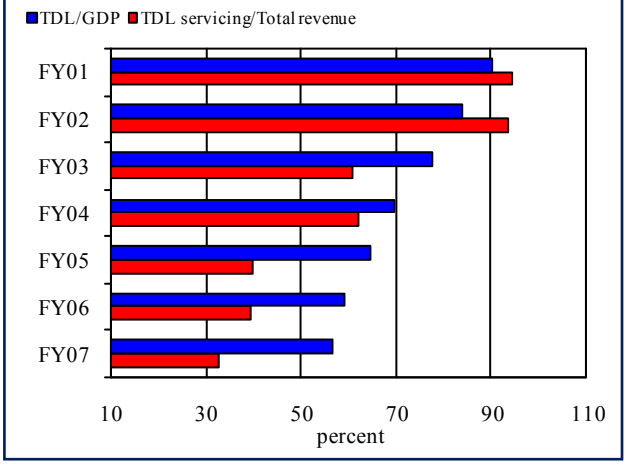


Figure 6.3: Short Term Debt Servicing

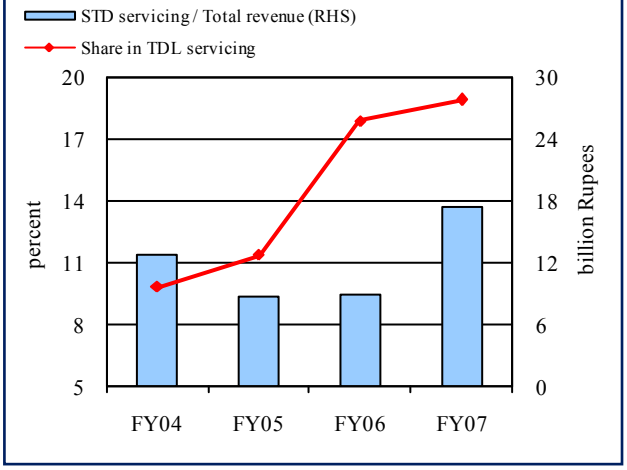


Table 6.1: Profile of Total Debt and Liabilities

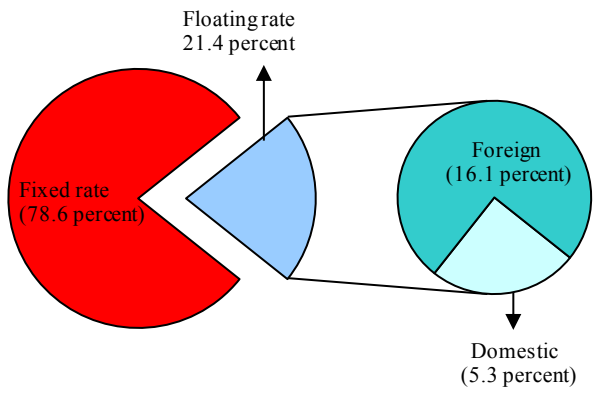
billion Rupees

	FY00	FY01	FY02	FY03	FY04	FY05	FY06	FY07
Total Debt & Liabilities	**3,553.9**	**4,113.3**	**3,911.6**	**3,904.0**	**4,030.5**	**4,288.9**	**4,564.1**	**5,023.6**
Total Debt	**3,258.4**	**3,791.8**	**3,723.5**	**3,781.4**	**3,917.0**	**4,181.6**	**4,468.6**	**4,934.6**
Growth rate	*4.3*	*16.6*	*-2.6*	*1.1*	*3.3*	*6.1*	*6.3*	*10.4*
1. Domestic debt	**1,578.8**	**1,731.0**	**1,717.9**	**1,853.7**	**1,979.5**	**2,149.9**	**2,321.7**	**2,597.0**
Growth rate	*13.4*	*9.6*	*-0.8*	*7.9*	*6.8*	*8.6*	*8.0*	*11.9*
	(48.5)	(45.7)	(46.1)	(49.0)	(50.5)	(51.4)	(52.0)	(52.6)
2. External debt	**1,679.6**	**2,060.8**	**2,005.6**	**1,927.7**	**1,937.5**	**2,031.7**	**2,146.9**	**2,337.7**
	(51.5)	(54.3)	(53.9)	(51.0)	(49.5)	(48.6)	(48.0)	(47.4)
3. Explicit liabilities [a]	**295.5**	**321.5**	**188.1**	**122.6**	**113.5**	**107.3**	**95.5**	**89.0**
	(8.3)	(7.8)	(4.8)	(3.1)	(2.8)	(2.5)	(2.1)	(1.8)
Total debt servicing	**417.9**	**522.4**	**588.7**	**436.4**	**491.9**	**358.8**	**424.4**	**538.5**
Total interest payment	292.8	281.0	289.0	253.0	241.8	236.2	294.0	425.6
Domestic	222.0	195.4	212.5	189.0	185.3	181.9	237.1	358.6
Foreign	54.2	64.0	51.3	48.1	51.2	49.1	50.5	61.1
Explicit Liabilities	16.6	21.5	25.2	16.0	5.3	5.2	6.4	5.8
Repayment of principal (foreign)	125.2	241.4	299.7	183.3	250.1	122.6	130.4	112.9
Debt as percent of GDP								
Total debt	85.2	90.1	83.6	77.6	69.4	64.3	58.8	56.7
Domestic debt	41.3	41.1	38.6	38.0	35.1	33.1	30.6	29.8
External debt	43.9	49.0	45.0	39.5	34.4	31.3	28.3	26.8
Explicit liabilities	7.7	7.6	4.2	2.5	2.0	1.7	1.3	1.0
Debt servicing as percent of								
Tax revenue	103.0	118.3	139.3	89.5	89.4	56.7	56.4	60.5
Total revenue	81.6	94.5	93.4	60.5	61.9	39.9	39.4	32.8
Total expenditure	52.3	48.1	53.1	33.3	31.4	28.0	22.7	21.4
Current expenditure	59.2	53.5	62.7	37.8	38.7	33.2	28.4	39.2
GDP	9.8	8.3	10.0	6.2	5.3	4.8	4.1	6.2

a) Explicit liabilities include all foreign liabilities owned by the country.
Figures in parentheses are shares in total debt.
Sources: i) SBP, ii) DM Section, Finance Division

In fact in the last few years, country is witnessing a rise in the floating rate inflows. A large share of these inflows on the floating interest rates makes the debt servicing burden vulnerable to short term movements in the interest rates. The rising share of such inflows in the total debt stock calls for the need of greater prudence in the future management of country's debt burden. However, as the maturity profile of the external debt stock has improved, this has reduced the liquidity and rollover risks associated with external debt.

Figure 6.4: Interest Rate Structure of TDL Inflows in FY07



6.2 Domestic Debt

Pakistan's domestic debt stock increased sharply during FY07, registering a growth of 11.9 percent – much higher than the average growth of 7.7 percent during the preceding

four years (see **Figure 6.5**). In absolute terms, the FY07 saw a substantial increase in the outstanding stock of longer term debt (particularly PIBs and NSS instruments). The increment is stock of T-bills during FY07 was however marginally higher compared to FY06.

Despite the stronger rise in domestic debt during FY07, the domestic-debt-to-GDP ratio has nonetheless improved slightly. It may however be noted that the clear downtrend in this ratio seen since FY01, appears to be bottoming out (see **Figure 6.6**).

As in the previous year, the growth in the *floating debt* category (which comprises of short term domestic debt instruments such as T-bills) accounted for nearly two-thirds of the rise in domestic debt in FY07, the share of short-term debt in total domestic debt increased by 7.2 percentage points to 11.9 percent (see **Figure 6.7**). This rising share of short term domestic debt means increased vulnerability to adverse short-term interest rate movements, potentially rendering future debt management more difficult.

Another important development is the sharp rise of 57.1 percent in interest payments on domestic debt during FY07. The strongest contribution to the increase is probably from maturing high-cost, zero coupon instruments (DSCs) issued in late 1990s. Other factors include the rising stock of domestic debt and rising domestic interest rates (the impact of this is transmitted to debt servicing costs faster due to the larger share of short-term and floating rate loans in total debt).

On the positive note, however, the ownership of short term debt has partially shifted from SBP to commercial banks during FY07. This partly reflects the impact of SBP's efforts to reduce its net domestic assets (NDA) to contain reserve money growth (see **Chapter on Money and Banking**).

Figure 6.5: Growth in Domestic Debt

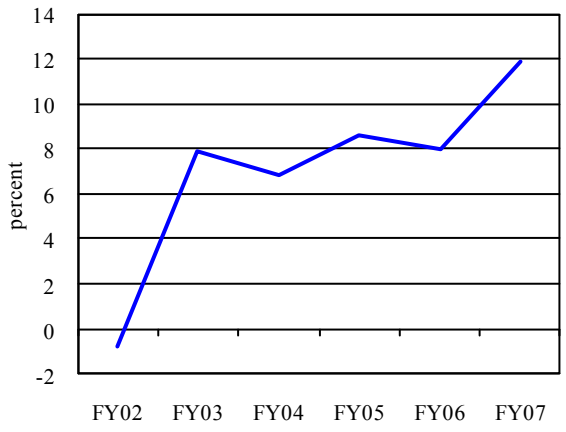


Figure 6.6: Domestic Debt as Percent of GDP

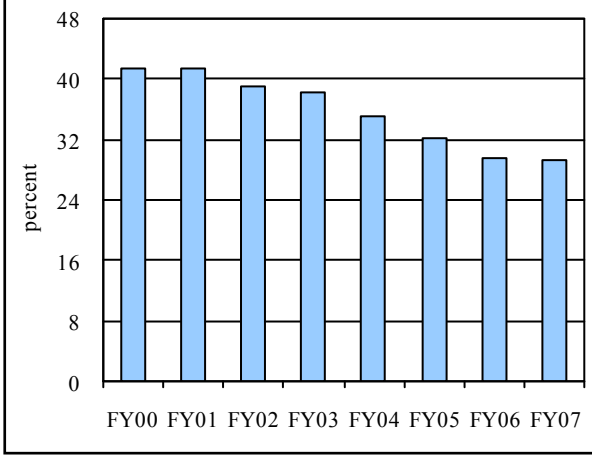
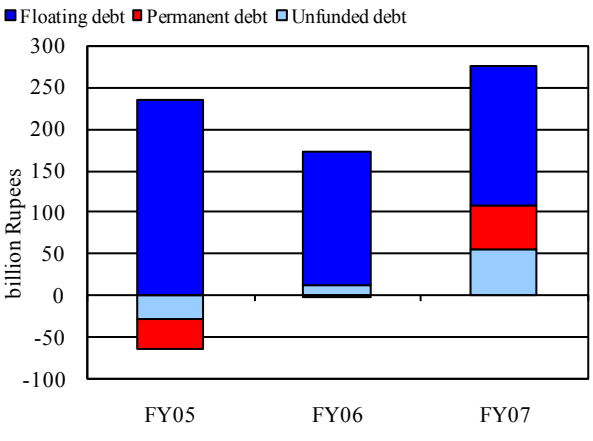


Figure 6.7: Change in Domestic Debt Stock



6.2.1 Composition of Domestic Debt

As seen in **Figure 6.7**, the increase in domestic debt during FY07 primarily stemmed from a rise in the stock of floating debt, although this year there were also some rise in the other two categories of domestic debt, i.e., *permanent and unfunded*.

Permanent Debt

The *permanent debt* mainly comprises of long-term Treasury bonds - the PIBs and (older) FIBs - and prize bonds (government bonds that have no fixed maturity). The stock of permanent debt witnessed a rise of 10.6 percent in FY07 (to Rs 553 billion), after declining in the previous two years. The increase is essentially due to the government's decision to resume issuance of PIBs in FY07. Government conducted five PIB auctions in FY07 (realized net Rs 48.6 billion) compared to FY06 when there was only one auction.

Consequent to the successful PIB auctions, and a modest increase in net sales of prize bonds (Rs 9.0 billion), the outstanding stock of permanent debt increased by Rs 53.2 billion during FY07, compared to a (net) decline of Rs 1.1 billion during FY06 (see **Figure 6.8**). Despite this modest increase in the outstanding stock, the share of permanent debt in total domestic debt decreased slightly to 21.3 percent in FY07 as compared to 21.5 percent in FY06.

Figure 6.8 : Net Flows in PIBs, FIBs and PBs

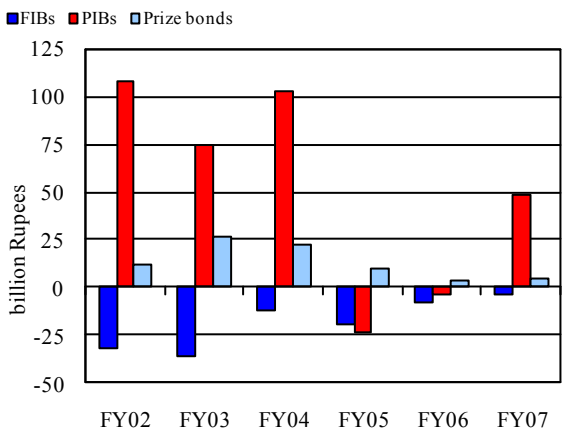
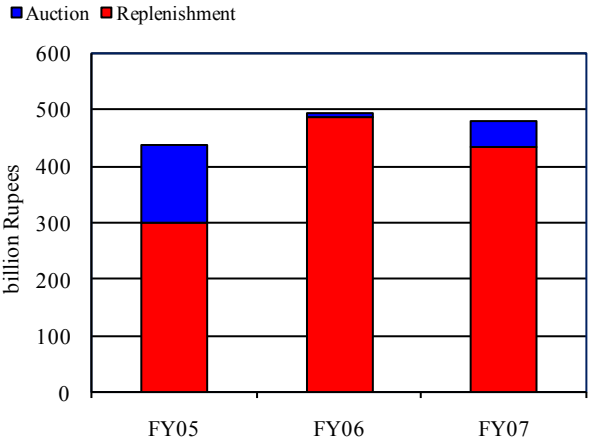


Figure 6.9: Outstanding Stock of 6-month T-bills



Floating Debt

The *floating* debt entirely comprises of zero coupon T-bills, having maturities of 3, 6 and 12 months. The T-bills of all tenors are issued through regular auctions, however the six month T-bills are also created when the government borrows directly from the central bank (see **Figure 6.9**).

Table 6.2: Outstanding Balance of T-bills

	3 month	6 month	12-month	Total
billion Rs				
Jun-05	256,041	98,816	29,750	384,607
Jun-06	2,135	7,358	458,717	468,210
Jun-07	2,950	46,213	661,786	710,949
Share in total				
Jun-05	66.6	25.7	7.7	
Jun-06	0.5	1.6	98.0	
Jun-07	0.4	6.5	93.1	

Source: DMMD ,State Bank of Pakistan

In recent years the government's reliance on these instruments to finance its deficit has increased (see **Table 6.2**). Most of the T-bills sold through auction in the last two years have been in the twelve months tenor. The higher demand for 12-month T-bills in FY06 issuance probably reflected a market expectations that interest rates has peaked and the same trend also continued in FY07. Also, the continued interest in the longer tenor T-Bill during FY07 was probably because the auction yields on the shorter tenor T-bills were lower than overnight money market rates.

In this context, it is not surprising that the rise in the stock of 6 month T-Bills during the last two years is principally due to Government borrowings from the central bank[1] (see **Figure 6.9**).

[1] These T-bills are solely issued in the 6-month tenor, and at the weighted average yield of accepted bids in the preceding market auction.

Unfunded Debt

The *unfunded* debt essentially comprises of instruments offered through the government's National Savings Schemes (NSS), including a number of long-term bonds, and deposit facilities. These bonds, that are available on tap and are not tradable, comprise over 54.2 percent of the total unfunded debt (see **Table 6.3**).

Table 6.3: Major NSS Instruments (Stocks)
billion Rupees

	FY03	FY04	FY05	FY06	FY07
DSCs	309.0	312.2	303.5	296.1	290.1
RICs	175.0	125.9	85.2	70.1	52.7
SSCs	294.4	281.2	197.9	140.4	146.8
Savings/SSA	61.1	63.3	61.8	60.8	73.7
PBAs	10.2	23.4	41.1	57.5	69.0
BSCs	--	22.7	83.3	143.0	190.2
Others	2.8	2.9	2.8	2.2	3.4
Total NSS	**852.5**	**831.6**	**775.6**	**770.1**	**825.9**

Source: CDNS

The stock of unfunded debt grew by 6.2 percent during FY07, in contrast to a modest 1.3 percent rise in FY06 and decline in the preceding two years. The weak growth in the unfunded debt in recent years reflected a number of factors including: (1) lower sales (and larger encashments) following reduction in interest rates offered on these instruments when their yields were (loosely) linked to the lower yields on tradable government paper of comparable tenors, (2) a ban on institutional investment in the NSS (introduced in FY00) as well as (3) a June 2003 decision to halt sales through commercial banks (which rendered these bonds relatively less accessible to the public).

The government's decision to reverse the ban on institutional investment and to resume sales through commercial bank, as well as upward revisions in the returns on NSS instruments were probably instrumental in the acceleration in the stock of NSS debt (and therefore unfunded debt) in FY07.

National Savings Schemes (NSS)[2]

The stock of NSS went up by Rs 55.8 billion during FY07, compared to rise of only Rs 8.5 billion during FY06. The improvement reflects a substantial increase in gross sales of some instruments and lower outflows (due to maturities or pre-mature encashments) in others.

Table 6.4: Performance of Selected NSS Instruments
billion Rupees

	Gross sales		Outstanding stocks	
	FY06	FY07	FY06	FY07
DSCs	17.5	30.1	296	290
SSCs	87.5	87.6	140	147
Saving A/c	39.8	59.1	60	73
BSCs	76.5	79.5	143	190

Source: CDNS

In particular, while the gross sales of the Defense Savings Certificates (DSC) improved in FY07, the outstanding stock declined (see **Table 6.4**). This was on account of the large maturities of DSCs sold 10 years ago, when the instrument offered exceptional above-market returns.

6.2.2 Interest Payments on Domestic Debt

Interest payments on domestic debt increased by 57.1 percent in FY07 compared to a growth of 28.8 percent in the previous year. This substantial rise may be seen in the context of the 11.9 percent rise in the overall stock of domestic debt, a rise in interest rates (particularly in short-term rates), and significant maturities of zero coupon 10-year government bonds (DSCs).

The unfunded debt continues to have the biggest share in the interest payments (see

Table 6.5: Interest Payments on Domestic Debt
billion Rupees

	FY05	FY06	FY07
Permanent debt	52.1	47.5	49.9
Floating debt	20.1	52.1	88.3
Unfunded debt	84.0	101.5	178.4
Others	1.1	1.4	1.5
Total	**157.3**	**202.5**	**318.1**
Year-on-year increase/decrease			
Permanent debt	-2.1	-4.6	2.4
Floating debt	4.5	32.0	36.2
Unfunded debt	-6.1	17.5	76.9
Others	-0.5	0.3	0.1
Total	**-4.2**	**45.2**	**115.6**

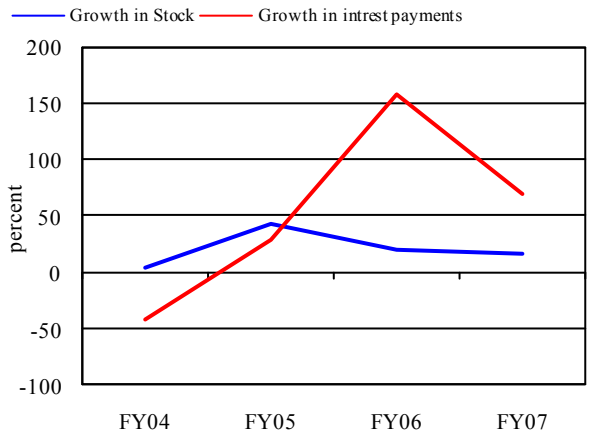
Source: MOF

[2] NSS does not include the Prize Bonds, as these are classified under the category of permanent debt.

Table 6.5), and almost all of the Rs 115 billion *increase* in the interest payments during FY07 compared to the previous year, is accounted for by *unfunded* and *floating* debt categories.

The rise in the former principally reflects a jump in the maturities of Defence Saving Certificates issued in earlier years; the interest on this instrument account for 73 percent of the total interest on unfunded debt paid in FY07, in contrast to the 48.2 percent share in FY06. On the other hand, the 27.8 percent jump in the interest paid on *floating* debt in FY07, reflects both, a moderate increase in the total stock of T-bills as well as the rise in short term interest rates. The interest cost of floating debt is more sensitive to movements in short-term debt, since the cost of the entire stock is rolled over, at maximum, within 12 months. Thus, as illustrated in **Figure 6.10,** while the stock of T-bills increased by only 17.8 percent in FY07, the interest cost jumped by a more considerable 69.4 percent.

Figure 6.10: Floating Debt

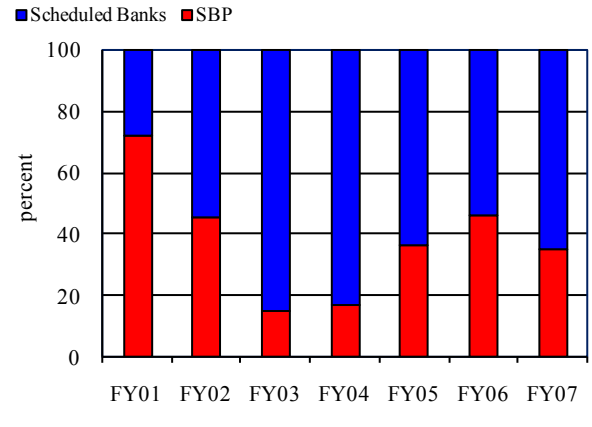


6.2.3 Classification of Domestic Debt by Owner

Domestic debt can broadly be classified into bank and non bank debt. The share of bank debt has increased considerably during FY07 for the fourth consecutive year.

This rise is entirely owed to a massive net government borrowing of Rs 160 billion from commercial banks during FY07. Share of commercial bank debt in total bank debt has reached to 64.6 percent in FY07 as compared to 53.4 percent in FY06. While the share of SBP debt decline to 35.4 percent in FY07 from 46.4 percent in FY06 (see **Figure 6.11**).

Figure 6.11: Composition of Government Debt Held by Banking System



SBP's holding of T-bills holding showed a net decline of Rs 56 billion in FY07 compared to corresponding period last year. This reflects the sterilization of the government borrowings by the central bank as well as banks' increased interest in T-bills following the slower growth in private sector credit. Going forward, the growth in government papers held by the SBP is expected to remain low as the State Bank of Pakistan (under section 9 (A) of SBP Act 1956) in its Monetary Policy Statement (Jul-Dec 2007) has recommended the government to retire borrowings from SBP by Rs 62.3 billion, adopt a quarterly ceiling on budgetary borrowings from SBP and extend the maturity profile of its borrowings.

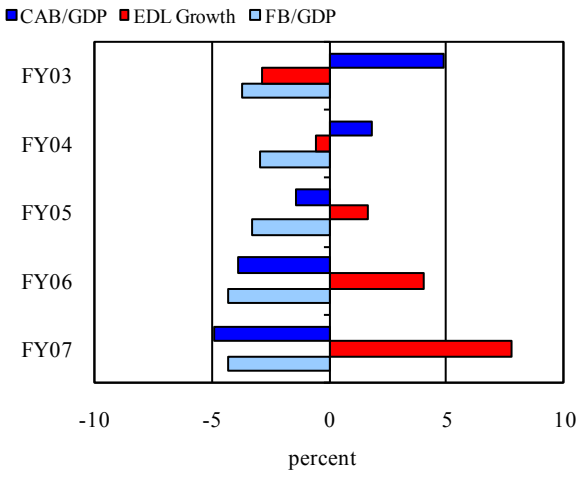
6.3 External Debt

Country's external debt and liabilities (EDL) rose to US$ 40.1 billion by end FY07, witnessing US$ 2.9 billion increase over the stock in FY06 (see **Table 6.6**). The major causative factors for this increase were rising level of current account deficit and a large fiscal deficit that raised the financing needs of the country (see **Figure 6.12**). The resulting rise in the EDL stock was contributed by inflows from IDA, ADB, and the issuance of a new Eurobond (see **Table 6.7**). Private loans also had

a sizeable contribution in this increase of the debt stock. A small part of the rise in debt stock was offset by falling stock of foreign liabilities. Encouragingly despite this rise in the stock of EDL, Pakistan's EDL to GDP ratio continued to improve.

A substantial part (62.5 percent) of the FY07 increase was on floating interest rates (see **Figure 6.13**). In fact for the past few years country is witnessing a rise in the floating rate loans. The rising share of such loans in the total debt stock calls for the need of greater prudence in the future management of country's debt burden. A higher share of flexible rate loans might translate into increasing debt servicing burden for the country in case of adverse movements in these variable lending rates.

Figure 6.12: External Debt Trends



CAB: Current account balance; FB: Fiscal balance

Table 6.6: Pakistan's External Debt & Liabilities

million US$

					Δ FY07 Over FY06	
	FY04	**FY05**	**FY06**	**FY07**	**Absolute**	**Percentage**
I. Public and publicly guaranteed debt	**29,875**	**31,084**	**32,579**	**35,290**	**2,711**	**8**
A. Medium and long term(>1 year)	**29,853**	**30,813**	**32,410**	**35,265**	**2,855**	**9**
Paris club	13,558	13,014	12,831	12,694	(137)	(1)
Multilateral	14,349	15,358	16,530	18,687	2,157	13
Other bilateral	720	805	847	1,002	155	18
Euro bonds/Saindak bonds	824	1,266	1,908	2,655	747	39
Military debt	204	188	130	83	(47)	(36)
Commercial Loans/credits	198	182	165	145	(21)	(12)
B. Short-term (<1 year)	**22**	**271**	**169**	**25**	**(144)**	**(85)**
IDB	22	271	169	25	(144)	(85)
II. Private non-guaranteed debts	**1,670**	**1,342**	**1,585**	**2,002**	**417**	**26**
Private loans/credits	1,670	1,342	1,585	2,002	417	26
III. IMF	**1,762**	**1,611**	**1,491**	**1,407**	**(84)**	**(6)**
Total external debt (I to III)	**33,307**	**34,037**	**35,655**	**38,699**	**3,044**	**9**
IV. Foreign exchange liabilities	**1,951**	**1,797**	**1,586**	**1,473**	**(112)**	**(7)**
Special US dollar bonds	552	421	247	156	(91)	(37)
National debt retirement program	1	-	-	-	-	-
Foreign currency bonds (NHA / NC)	153	131	109	88	(21)	(20)
Central bank deposits	700	700	700	700	-	-
NBP (BOC deposits)	500	500	500	500	-	-
Other liabilities (SWAP)	45	45	30	30	-	-
Total external debt and liabilities (I to IV)	**35,258**	**35,834**	**37,241**	**40,172**	**2,932**	**8**
FEBCs/FCBCs/DBCs (payable in Rs)	22	10	7	5	(1)	(21)

P: Provisional

Source: State Bank of Pakistan

During FY07, the US$ 750 million 10-year Eurobond issued by the country and a substantial share of inflows from ADB were on floating interest rates. The Eurobond was issued not only to maintain a presence in the international capital markets but also to meet the rising financing needs of the country

in view of rising public expenditure. The presence of a sovereign benchmark has already helped some domestic corporates to access the international capital markets in FY07. Encouragingly, the terms of the new issue of Eurobond were favorable when compared with those of the previous bonds. The interest rate of this bond was not only lower than the 10-year bond issued by the country in FY06, but was also very close to the pricing obtained for sovereign bonds of similar tenor issued in FY04.

During FY07 the terms of the financing obtained from ADB seems to have undergone a change. A larger share (61 percent) of these inflows were on floating interest rates, which were market based in contrast to the previous years, when country obtained higher inflows of concessional loans from Asian Development Fund (ADF) – ADF is a financing window of the ADB that provides concessional loans to the poorest borrowing countries. Ironically, it was the Pakistan's improved economic performance (and resulting sustained high GDP growth rates for the past few years) that has reduced country's eligibility for concessional financing from ADF.

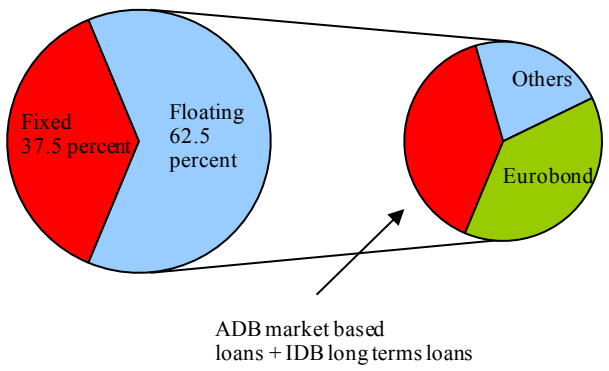
Table 6.7: Sources of Increase in EDL Stock - FY07

value: million US$, growth/share: percent

	Abs Δ	Growth	Share
Paris club	-36.5	-1.1	-4.4
Multilateral	2,157.5	13.1	69.9
ADB	*810.7*	*12.8*	*37.6*
IDA	*1,154.6*	*15.1*	*53.5*
IDB (Long-term)	*250.6*	*390.1*	*11.6*
Other bilateral	154.8	18.3	5.0
Euro bonds	746.9	57.7	24.3
Short term	-144.0	-85.2	-4.7
Private non-guaranteed debts	417.1	26.3	13.5
Foreign exchange liabilities	-112.5	-7.1	-3.6
Total	**2,931.7**	**7.8**	**100.0**

Source: Statistics Department , State Bank of Pakistan

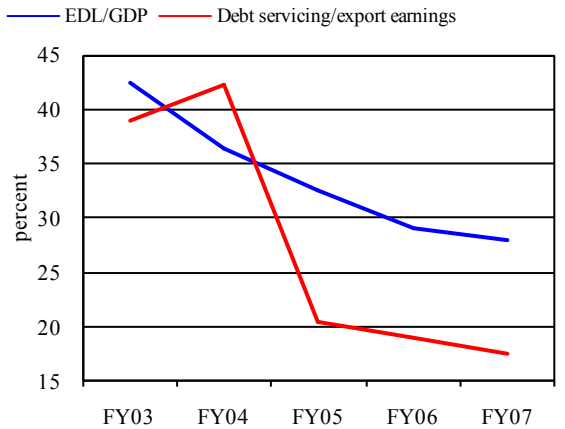
Figure 6.13: Cost Structure of Loans Inflows in FY07



Encouragingly the country has also witnessed an improvement in the maturity profile of its debt stock in FY07. A significant share of the floating rate loans inflows during the year had long maturity ranging from 15 – 25 years. In addition to that, a large share of the fixed rate loan received from IDA and ADF during FY07 were on concessional terms having a long maturity ranging from 30-40 years. This improved maturity structure to some extent offsets the effects of the floating interest rate structure of these loans due to the availability of longer repayment period.

Despite the increasing stock of EDL, the ratio of EDL to GDP continued the falling trend observed in the past few years (see **Figure 6.14**). The fall in this ratio (that was caused by high GDP growth) suggests an improved potential of the economy to generate resources to service the debt burden.

Figure 6.14: Indicators for External Debt & Liabilities



The ratio of debt servicing to export earnings also witnessed improvement during FY07 as compared to FY06. It is however worth mentioning that in the coming years, country is likely to face higher burden of debt servicing as (1) repayments of the rescheduled non-ODA Paris club debt stock will resume from FY08, and (2) the maturities of the Eurobond issued in FY04 and Sukuk issued in FY05 will become due in

FY09 and FY10 respectively. In addition, interest payments on various Eurobonds issued recently are likely to add to debt servicing burden in coming years. Thus, the expected rise in the servicing burden will even more than offset the benefit in servicing from depleting stock of foreign liabilities. However if export earnings keep on growing even at the current slow rate, the debt servicing burden adjusted for the forthcoming payments is not likely to cause a significant deterioration in the ratio of DS/EE.[3]

Studies of the theoretical determinants of a country's external debt burden identifies GDP growth and non-interest current account balance as the major variables determining the path of debt to GDP ratio. The analysis of the impacts of expected future movements of these variables on country's EDL to GDP ratio shows that deterioration in country non-interest current account balance to GDP ratio might cause a marginal rise in the EDL to GDP in the medium term. However this ratio is likely to remain significantly below the peak of 57.2 percent witnessed in FY01 (see **Special Section: 6.1 -External Debt Sustainability Analysis – Pakistan**).

6.3.1 Debt Sustainability Indicators

Despite the increasing stock of external debt and liabilities, country witnessed an improvement in most of its debt sustainability indicators during FY07 (see **Table 6.8**). Especially the ratio of external debt & liabilities to GDP continued the previous falling trend, showing an improved potential of the economy to service its debt burden. Since a substantial (88 percent in FY07) share of country's EDL stock comprises of public and publicly guaranteed debt, it is pertinent to compare the EDL stock with the underlying source of repayment, i.e., governments' revenue receipts. Encouragingly despite the rising level of country's external debt stock, the ratio of external debt to total revenue receipts is showing a falling trend that reflects country's improved ability to service its external debt stock (see **Figure 6.15**).

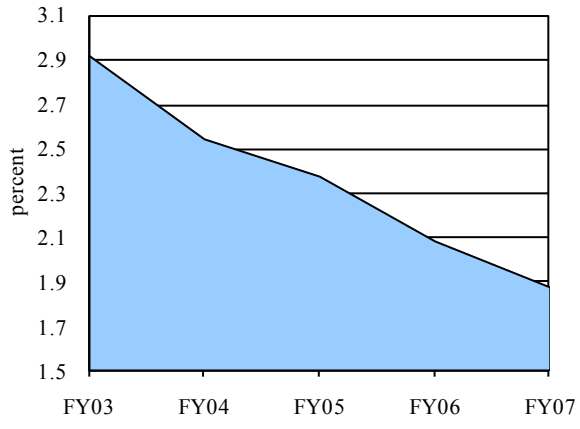
Table 6.8: Selected External Debt/Liabilities Indicators

	Ratio of total EDL to							
	GDP	EE	FEE	RES/TEL	RES/STD	RES/(STD+CAB)	DS/EE	DS/FEE
FY03	42.5	323.3	180.5	26.9	50.9	2.5	39.0	21.8
FY04	36.4	283.0	164.3	29.9	479.7	5.9	42.3	24.6
FY05	32.5	247.4	134.0	27.3	36.1	5.4	20.5	11.1
FY06	29.1	227.4	120.0	28.9	63.7	2.1	19.0	10.0
FY07	28.0	235.2	124.8	33.2	533.1	1.9	17.4	9.3

Note: Foreign Exchange Earnings is the sum of earning from goods, services & private transfers
EDL: External debt & liabilities; EE: Export earnings, FEE: Foreign exchange earnings, RES: SBP liquid foreign without CRR & sinking fund, STD: Short term debt, CAB: current account balance.
Source: Calculations based on data obtained from Statistics Department, State Bank of Pakistan

This improvement in debt ratios was probably an important factor that led to improvement in sovereign rating; Moody's up-graded country's foreign and local currency bond ratings to B1 from B2 in FY07. Also, a comparison with some peer countries reflects strong position of the country relative to other emerging economies with respect to some of the external debt indicators (see **Box 6.1**).

Figure 6.15: EDL Stock/ Revenue Receipts



[3] For details see section on **External Debt & Liabilities Servicing**

Box 6.1: External Debt Indicators – A Comparison

Pakistan was categorized by Global Development Finance (GDF) – a publication of the World Bank – as a moderately indebted country in 2006 along with other 38 moderately indebted countries among a group of 211 countries. This classification was based on the values of the ratios of present value of debt (PV) to export of goods and services (XGS) and to gross national income (GNI) (see **Table 6.1.1**). This section compares Pakistan's external debt profile with some of the peer countries that were classified as severely indebted (Indonesia), less indebted (India) and moderately indebted (Malaysia & Philippines) by the GDF to help form an overall view regarding countries' external debt profile (see **Figure 6.1.1**).

Table 6.1.1: GDF Income and Indebtedness Classification Criterion

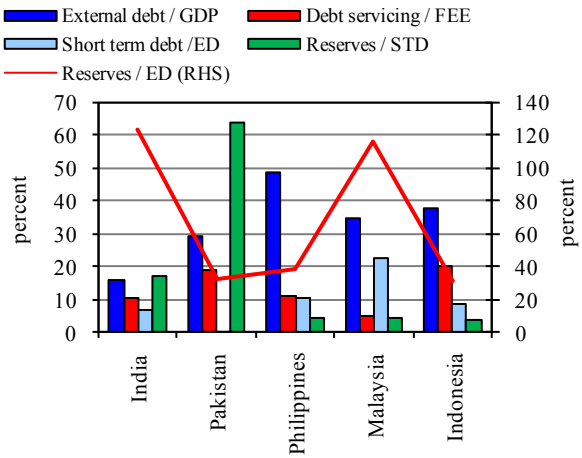
PV / XGS	Indebtedness	PV / GNI	Indebtedness
> 220 %	Severe	> 80 %	Severe
132% < 220%	Moderate	48 % < 80 %	Moderate
< 132%	Less	< 48%	Less

Source: Global Development Finance (GDF), World Bank, 2002

Encouragingly Pakistan witnessed a lower debt/GDP ratio than all other countries included in the analysis except India during 2006. This might be mentioned here that Indonesia had higher debt to GDP ratio than that of Pakistan even after making huge prepayments of US$ 8 billion to IMF in 2006.

The share of short term debt in the total debt stock of a country is an important indicator of gauging country's debt servicing vulnerability. Pakistan had the lowest share of short term debt in the total debt stock among all countries of the group that shows country's safe position in terms of maturity profile of country's debt stock. In fact this maturity profile of country's external debt stock also offsets the impact of relatively lower reserve coverage of country's EDL stock as compared to that of peer countries except Indonesia. Further the ratio of a country's international reserves to short term debt stock that are a more direct measure for gauging debt servicing vulnerability showed that Pakistan was in a very comfortable position as compared to these countries.

Figure 6.1.1: External Debt Indicators 2006 - Comparison



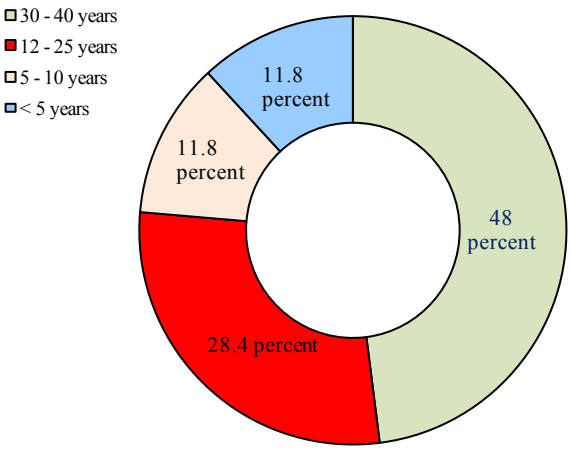
FEE - Export of goods, services and income

However Pakistan's debt servicing to foreign exchange earnings ratio was higher during 2006 as compared to that of other peer countries except Indonesia. This might be attributable to countries' relatively lower foreign exchange earnings during the year.

Country's debt indicators have improved significantly over the years and now show a comfortable position. There is a need to continue with the current external debt management policy in order to maintain this improved scenario.

However the ratios of EDL to exports as well as overall foreign exchange earnings showed slight deterioration during FY07. This was due to the relatively sluggish growth of exports during this period, suggesting a marginal reduction in comfort level of the country for servicing the debt burden. The worsening of this ratio when seen in the context of rapidly increasing debt stock for the past two years raises some concerns regarding the future ability of the country to service the debt burden. Yet the fact that majority of the new loan inflows being received have a long maturity period (see **Figure 6.16**) [4] allays concerns regarding the country's future debt

Figure 6.16: Maturity Structure of Major Inflows in FY07



[4] The inflows data is available only for the period Jul-Mar FY07.

servicing capacity as the burden of servicing the debt stock is spread over a longer time horizon

Country's debt servicing burden was given a relief by the re-scheduling of the Paris club debt stock obtained in FY02. The improvement brought about by re-scheduling is evident from falling ratios of debt servicing to export earnings and foreign exchange earnings, despite the rising stock of EDL from FY04. However from FY08 the payments' pressure is likely to increase as (1) the rescheduled payments for non-ODA Paris club debt will resume in this year, (2) the maturities for the Eurobonds issued in FY04 and FY05 will become due in FY09 and FY10 respectively. [5] Therefore in order to maintain the same debt servicing capacity country's foreign exchange earnings, and particularly export earnings need to grow faster. The country's debt servicing capacity is well reflected in external debt servicing vulnerability indicator (see **Box 6.2**).

Further, the liquidity indicators as shown by the ratios of reserves to EDL as well as STD also showed improvement during FY07 over last year. This was on account of increased build up of country's foreign exchange reserves and also due to the very low level of country's stock of short term debt in FY07. Economic literature[6] argues that in addition to the short term debt a country's reserve adequacy should also be gauged in relation to the financing needs caused by its current account deficit. For that matter the ratio of country's foreign reserves to short term debt augmented by the current account deficit is also included in this analysis. This ratio is witnessing a downward trend since FY05, on account of rising level of current account deficit that highlights the need of controlling country's current account deficit or the possibility of a further rise in the debt burden for financing this deficit of the current account.

Box 6.2: External Debt Servicing Vulnerability Index

During the past few years Pakistan has been regularly tapping international capital market for financing part of its growth, which has led to increase in its indebtedness. However, since country's debt burden is often evaluated in terms of its capacity to repay, there is an increasing need to constantly monitor country's macroeconomic performance to assess its debt repayment capacity. In this regard the ratio of external debt and liabilities to foreign exchange earnings is commonly used to assess country's debt repayment capacity. However, this indicator does not take into account number of other factors such as political uncertainty, domestic inflation etc, which can also adversely impact countries debt repayment capacity.

In this regard Abdullah (1985)[7] has constructed an index by incorporating indicators, the adverse movements of which had preceded payment interruptions in various countries. The index relates macroeconomic performance of the country with its external debt servicing capacity by taking into account various macroeconomic indicators such as reserves, exports, inflation and country's political environment. The aim is to prepare an early warning signal that can indicate any weakness in country's debt repayment capacity.

The index is constructed by taking the weighted average of the following ratios:

(1) Ratio of international reserves held by the country with the level of reserves in the preceding year – this ratio depicts changes in country's international liquidity position. A higher value of this ratio reflects rising stock of country's international reserves and thus a higher ability of the country to repay its foreign liabilities.
(2) Ratio of growth in exports to growth in country's external debt – that gauges changes in country's debt repayment capacity. A larger value of this ratio and thus a faster growth in exports as compared to external debt indicates stronger debt repayment capacity.
(3) Ratio of inflation in the previous period with the rate of inflation in the current period – a smaller number reflects erosion in country's debt repayment capacity caused by higher inflation. Since, higher inflation leads to a rise in the debt servicing cost of a country by causing exchange rate depreciation.
(4) Ratio of exports in the current period with exports in the preceding period – this ratio captures changes in a major source of a country's foreign exchange earnings that in turn impact's country's debt repayment capacity.

[5] For details see section on ***External Debt & Liabilities Servicing***
[6] IMF (2000), "Debt and Reserve-Related Indicators of External Vulnerability".
[7] Abdullah A. Faud (1985), "Development of an Advance Warning Indicator of External Debt Servicing Vulnerability", *Journal of International Business Studies*, Vol. 16, No. 3, pp. 135-141.

Table 6.2.1: Computation of External Debt Servicing Vulnerability Index for Pakistan

	Reserves ratio	Exports / EDL* growth ratio	Inflation ratio	Exports ratio	Weighted average	Political stability	Index
1997	1.9	2.6	1.4	1.6	7.5	1.0	8.5
1998	1.4	2.4	2.3	1.4	7.5	1.0	8.5
1999	3.7	2.0	2.0	1.4	9.1	1.0	10.1
2000	1.5	2.9	2.3	1.7	8.4	2.5	10.9
2001	4.2	2.7	1.3	1.6	9.8	2.0	11.8
2002	6.4	2.4	1.9	1.5	12.2	1.0	13.2
2003	5.5	3.1	1.7	1.8	12.1	2.0	14.1
2004	2.8	2.8	1.0	1.7	8.2	2.0	10.2
2005	2.3	2.9	0.7	1.8	7.7	2.0	9.7
2006	2.7	2.7	1.8	1.7	9.0	1.5	10.5
2007	3.1	2.4	1.5	1.6	8.6	1.0	9.6

* External debt and liabilities

Source: Calculations based on data obtained from Statistics Department, State Bank of Pakistan

The first two ratios are assigned weights of 2.5 each while the weights for the last two are 1.5. The higher weights for the first two ratios highlight their importance in impacting country's debt repayment capacity. Finally political environment of the country also affect country's foreign exchange earning capacity that in turn determines its debt repayment capacity. This measure is assigned subjective weights ranging from 1 to 2.5.[8] External debt servicing vulnerability index thus compiled is given in **Table 6.2.1** and its interpretation in **Table 6.2.2**. Here this is worth mentioning that the results of this exercise will change drastically with the change of weights assigned to these ratios. Here the weights assigned for the calculation of this index are taken from Abdullah (1985) since the results that he obtained by using these weights passed the test of reality for 20 major debtor countries in Latin America, Asia, Africa and the Middle East.

As per the external debt servicing vulnerability index, Pakistan witnessed deterioration in its debt servicing profile before 1999 (see **Table 6.2.1**). However, afterwards the situation started to improve mostly due to a substantial rise in the stock of country's international reserves and a strong growth in exports. This is confirmed by **Table 6.2.1** that shows improvement in the reserve ratio in 1999 and in exports / EDL growth along with export ratio FY00 onwards. The score on vulnerability index after reaching highest value in FY03 fell during FY04-FY06 but remained in the vicinity of 10, reflecting no significant change in country's debt repayment profile.

The fall in the value of the index during FY04-FY06 can be attributed to the following factors; (1) A fall in the reserve ratio that was caused by prepayment of expensive external debt in FY04 and subsequent pressure on the reserves due to a sharp surge in country's imports, (2) rise in inflationary pressures in the country FY03 onwards that caused a fall in the ratio of inflation in the previous period to that in the current period.

Table 6.2.2: Interpretation of Results

Score	Interpretation
< 6	High likelihood of default
6 - 8	Serious oncoming problems.
8 - 10	Deterioration in debt servicing capacity
10	No significant change in debt servicing profile
> 10	Improvement in debt servicing profile

The loss in the value of index in FY07 is, however, discomforting and appears to be the result of the rising political uncertainty in the country, as other ratios of macroeconomic performance of the country still supports its debt burden. The Index thus highlights the need for political stability in the country in order to avoid any change in the perception of the creditors that can adversely affect countries debt repayment capacity.

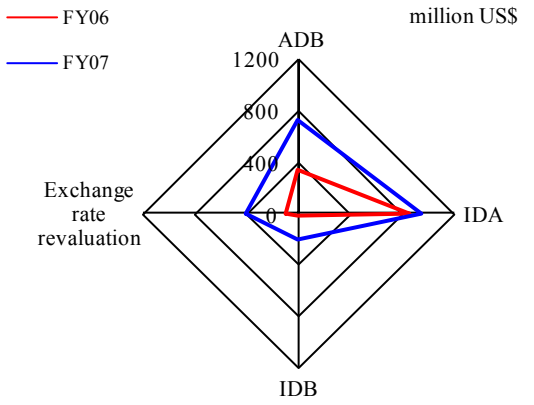
[8] The interpretation of rations: 2.5 – improvement in political situation; 2.0 – no change in political condition; 1.5 – deterioration; 1.0 – for seriously adverse political environment.

6.3.2 Structure of External Debt & Liabilities

Multilateral

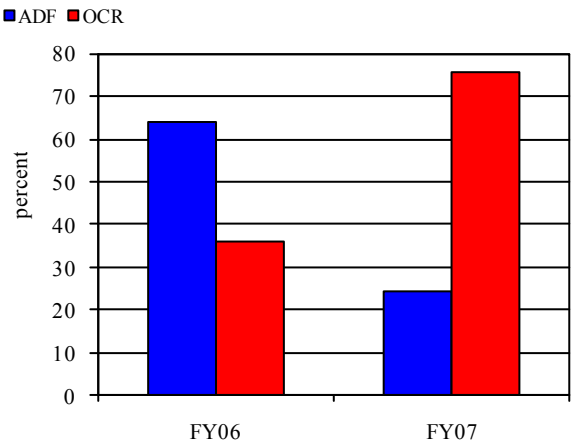
The debt owed to multilateral agencies witnessed a substantial US$ 2,157 million net rise during FY07 over the level in FY06. The rise in multilateral debt stock was one of the major factors leading to rise in the total debt stock during FY07. This was in turn contributed by rising loan inflows from IDA, ADB, and IDB. Besides, exchange rate revaluation impact led by depreciation of US$ against Euro[9] also had a significant (18.6 percent) share in the rising debt stock of multilateral creditors during FY07 (see **Figure 6.17**).

Figure 6.17: Sources of Rise in the Multilateral Debt Stock



As compared to the previous year, country received considerably higher inflows from ADB during FY07. Further the composition of inflows from ADB also underwent a shift, with a higher share of market-based loans obtained from Ordinary Capital Resources (OCR) instead of inflows from Asian Development Fund (ADF) seen in the previous year (see **Figure 6.18**). This was due to improved economic position of the country which has reduced country's allocation quota for the concessional loans from ADF.

Figure 6.18: Composition of ADB Financing



Furthermore, loans of more than one year maturity were obtained from IDB this year for financing its oil imports, as opposed to the practice of obtaining short term loans from IDB. This is due to the introduction of a new and a slightly flexible financing package by IDB.

Table 6.9: Terms of Multilateral Loans

percent

			Interest rates		Amortization Period
	Share	Grace Period	During grace	After grace	
IDA	53.3	10 years	0.75[1]	0.75	35
ADB	9.4	10 years[2]	1	1.5	32-40
ADB	5.5		libor[3] +60 bps		15-25
ADB	22.5	-	libor+60 bps		15-25
IDB	9.2	-	libor+60 bps		2

[1] 0.75% is the service charge, since these loans carry no interest rates.

[2] Some loans have grace period of 8 years.

[3] Yen based Libor.

[9] During FY07 US$ underwent 5.39 percent depreciation against Euro.

The analysis of the terms of the inflows obtained from multilateral creditors reflects (see **Table 6.9**) that concessioanl loans disbursed from IDA had a large share in the total inflows. A small share of loans disbursed from ADB was also on soft terms, since they had very low rate of interest and longer maturity period. In addition to that the ADB loans on relatively higher interest rates also had a long maturity period.

Paris Club & Other Bilateral

Country's Paris club debt stock recorded a US$ 136.5 million fall during FY07 as compared to the level witnessed in FY06. In the absence of any major inflows from Paris club creditors during FY07 the payment of principal (that also includes capitalized interest) led to a fall in the Paris club debt stock during this period.

The debt stock from other bilateral creditors on the other hand witnessed a US$ 154.8 million rise during FY07. The major share of this rise was contributed by inflows from China. These inflows largely had a lower interest rate of 2 percent and a maturity of 20 years.

Sovereign Bonds

The stock of sovereign bonds recorded a US$ 745 million rise during FY07 over the level in FY06 reaching US$ 2.65 billion. This rise was caused by the issue of a new US$ 750 million 10-year Eurobond by the country during this year that will mature in 2017. A comparison of the terms of this bond with the previous issues of Eurobonds reveals improving perception of country's economic performance in the eyes of international investors. This is evident from the interest rate obtained for this bond which is not only lower than the 10-year bond issued by the country in FY06 but is also very close to the rate obtained for a smaller tenor bond issued by the country in FY04 (see **Table 6.10**).

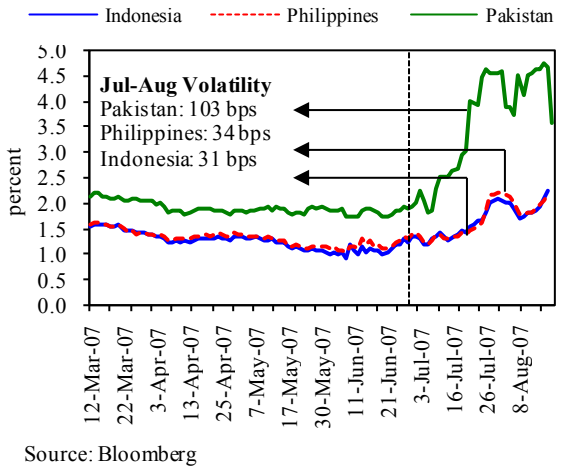
Table 6.10: Sovereign Bonds

value: million US$

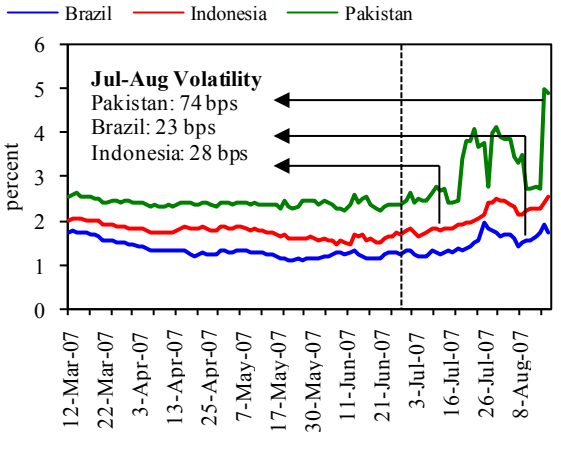
	Bond	Tenor	Value	Interest rates
FY04	Euro	5 years	500	6 m Libor + 323 bps (6.75%)
FY05	Sukuk	5 years	600	6 m Libor + 220 bps
FY06	Euro	10 years	500	10 years US t-bill + 240 bps (7.125%)
	Euro	30 years	300	30 year US t-bill + 302 bps (7.875%)
FY07	Euro	10 years	750	10 year US t-bill + 200 bps (6.875 %)

Source: EAD

Figure 6.19: Spread of 10-Year Eurobonds Yields in Secondary Market



Spread of 30-Year Eurobonds Yields in Secondary Market



Source: Bloomberg

A contributing factor in this improved perception of the economy might also be the up-gradation of country's foreign currency bond ratings by Moody's from B2 to B1 in Q2-FY07. Further the

performance of the two Eurobonds issued by the country in FY06 (maturing in 2016 and 2036) also remained satisfactory. This is evident from the secondary market spread of these bonds against their benchmark levels (see **Figure 6.19**).[10]

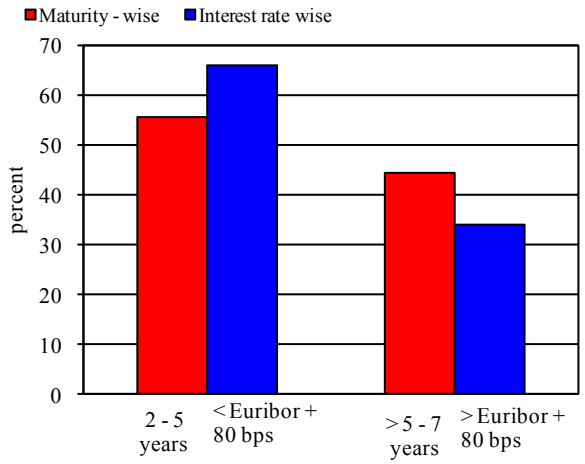
Further the spread of Pakistan's Eurobonds started to rise sharply and reached a peak of 472 and 500 basis points respectively for the 10-year and 30-year notes during August FY08. In addition to that the volatility in Pakistani bonds' spreads was also higher than the volatility observed in the spreads of other peer countries sovereign bonds. This might also be attributed to two factors: (1) tight liquidity situation in the international financial markets following the sub-prime crisis in the US, and (2), deteriorating law and order situation in Pakistan that resulted in an overall erosion of country's international image. This belief is also strengthened by the lowering of country's foreign currency outlook by Standard & Poor's from *positive* to *stable* in Q1-FY08.

Foreign Private Loans

The stock of private loans witnessed a net US$ 417 million rise in FY07 over the stock in FY06. Around half of the private loans inflows received during FY07 were long term loans obtained by PIA. The remaining inflows received were of medium term with maturity ranging between 2 to 7 years. In these medium term loans, 80.3 percent share was contributed by fresh loans to the communication sector. Apart from this, a small contribution was also made by inflows to cement, financial businesses and textile sectors.

The rise in medium term foreign private loans is attributable to multiple factors: (1) current pace of economic growth that expanded the financing needs of the private sector, (2) the reported exhaustion of domestic borrowing limits of some of the private companies, and (3) in some cases the cost of foreign currency borrowings (inclusive of cost of hedging exchange risk) is comparable or lower than the domestic borrowing costs [11] specially after the monetary tightening by SBP (see **Figure 6.20** for some terms applicable on such loans).

Figure 6.20: Terms-Wise Break up of Foreign Private Loans (Excluding PIA Loans)



The end June FY07 Euribor rate is 4.085 percent

Foreign Exchange Liabilities

Country's stock of foreign exchange liabilities witnessed a US$ 112 million fall during FY07 as compared to the stock in FY06. This fall was largely contributed by the falling stock of Special US$ bonds along with falling stock of NHA bonds.

Special US$ bonds

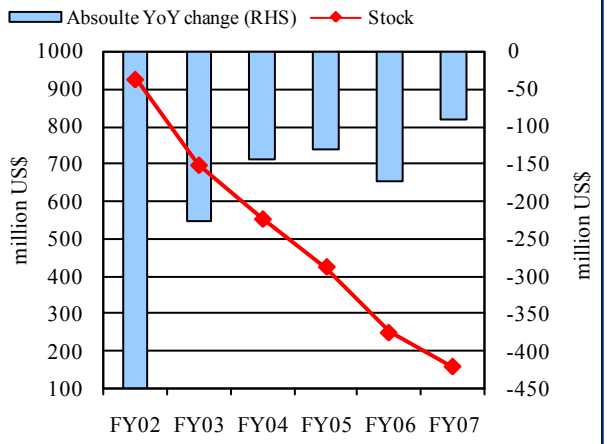
The US$ 91 million fall in the stock of Special US$ bonds during FY07 over the stock in FY06 include the encashment of 3, 5 and 7-years tenor bonds. The stock of Special US$ bonds has fallen sharply since FY02 after the maturity of most of 3-year Special bonds (see **Figure 6.21**). However in FY02 government allowed reinvestment of 3 year US$ bonds, resultantly a portion of 3-year Special US$ bonds was re-invested, which became encashable in FY05 and FY06. Further the encashment for the longest tenor i.e. 7-years bonds have also become due since FY06. Hence with all bonds

[10] During Q4-FY07 the maximum spread of the 10-year note against bench mark rate of 10 year US T-bill was 223 basis points which was lower than the issue spread of 240 basis points.
[11] The end June FY07 weighted average lending rate on outstanding advances was 11.3 percent.

maturing, these foreign liabilities are expected to totally deplete. However the depletion of these liabilities depends on the encashment by the bond holders. The current stock of Special US$ bond also contains the amounts of bonds that had matured earlier but are not yet enchased by the bond holders. These liabilities will not carry any interest burden after the maturity of bonds.

The stock of *NHA bonds* also witnessed a US$ 21 million fall due to the payment of principal under this head. The NHA bonds issue in 1991, had 20-years tenor. According to the terms of these bonds annual payments worth US$ 21.89 million are paid to a banking consortium. The last payment under this head will be due in FY10.

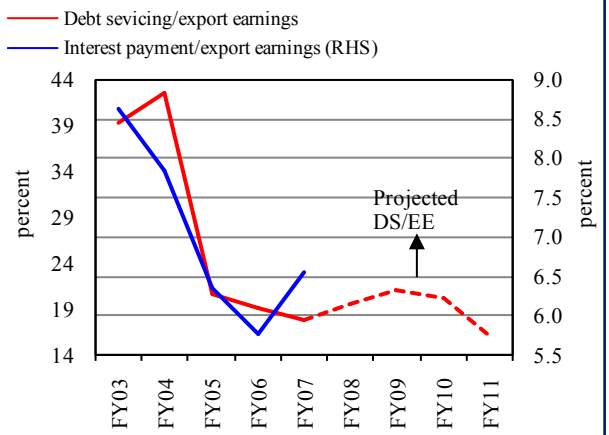
Figure 6.21: Stock of Special US$ Bonds



6.3.3 External Debt & Liabilities Servicing

Country paid around US$ 3 billion for servicing its external debt & liabilities during FY07, which is slightly lower than the amount paid in FY06 (see **Table 6.11**). This fall was largely caused by falling payments of foreign liabilities due to lower encashment of special US$ bonds owing to their depleting stock. In the external liabilities portion of the EDL, special US$ bond and NHA bonds are the only heads for which country is paying relatively large principal payments. The principal payments on these heads are also likely to completely phase out within few years as explained above. The principal on the remaining categories is being rolled over and these liabilities carry only interest charges.

Figure 6.22: Debt Servicing Indicators



The overall servicing of external debt also witnessed a slight fall during FY07 due to very low principal payments of the stock of Eurobonds, whereas the interest payments in this head remained higher than the last year. This is because of the interest payments for the Eurobonds issued in FY06. Further, the debt servicing of private non-guaranteed loans also witnessed a rise during FY07.

On account of these declining payments during FY07, the debt servicing ratios to export earnings and foreign exchange earnings continued the downward trend seen in the past few years (see **Figure 6.22**). The improvement in this ratio was on account of lower payments of principal. The interest payment to export earning ratio however deteriorated in FY07 due to both sluggish export growth as well as higher interest payment to multilateral creditors, private loans and Eurobonds during FY07.

The outlook for debt servicing reveals that in the coming few years, the country is likely to witness a rise in debt servicing payments on account of (1) higher principal and interest payments for

Table 6.11 : Pakistan's External Debt and Liabilities Servicing
million US$

	FY05		FY06		FY07[p]	
	Actual paid	**Rescheduled/ rollover**	**Actual paid**	**Rescheduled/ rollover**	**Actual paid**	**Rescheduled/ rollover**
1.Public and publicly guaranteed	**1811**	**100**	**2241**	**100**	**2076**	**100**
Principal	1120	100	1504	100	1237	100
Interest	691	0	738	0	839	0
A. Medium and long term (> 1 year)	**1803**	**100**	**1957**	**100**	**1874**	**100**
Principal	1112	100	1233	100	1045	100
Interest	691	0	724	0	829	0
Paris club	**533**	**0**	**614**	**0**	**593**	**0**
Principal	152	0	257	0	232	0
Interest	381	0	356	0	361	0
Multilateral	**899**	**0**	**888**	**0**	**951**	**0**
Principal	692	0	661	0	681	0
Interest	207	0	227	0	270	0
Other bilateral	**52**	**0**	**115**	**0**	**103**	**0**
Principal	27	0	80	0	68	0
Interest	25	0	35	0	36	0
Eurobonds	**217**	**0**	**250**	**0**	**148**	**0**
Principal	158	0	159	0	3	0
Interest	60	0	91	0	145	0
Military	**79**	**0**	**68**	**0**	**54**	**0**
Principal	67	0	60	0	46	0
Interest	12	0	8	0	8	0
Commercial loans /credits	**23**	**100**	**23**	**100**	**26**	**100**
Principal	16	100	16	100	16	100
Interest	6	0	7	0	10	0
B. Short-term (< I year)	**9**	**0**	**284**	**0**	**202**	**0**
IDB	**9**	**0**	**284**	**0**	**202**	**0**
Principal	8	0	271	0	192	0
Interest	0	0	14	0	10	0
2. Private non-guaranteed	**482**	**0**	**404**	**0**	**549**	**0**
Principal	374	0	320	0	400	0
Interest	109	0	85	0	149	0
3. IMF	**423**	**0**	**159**	**0**	**144**	**0**
Repurchases /principal	400	0	143	0	120	0
Charges/interest	23	0	16	0	24	0
Total Debt servicing (I+II+III+IV)	**2716**	**100**	**2804**	**100**	**2769**	**100**
Principal	1893	100	1966	100	1756	100
Interest	823	0	838	0	1012	0
4. Central bank deposits	**24**	**700**	**34**	**700**	**27**	**700**
Principal	0	700	0	700	0	700
Interest	24	0	34	0	27	0
5. NBP /BOC deposits	**16**	**500**	**28**	**500**	**47**	**500**
Principal	0	500	0	500	0	500
Interest	16	0	28	0	47	0
6. Special US$ bonds	**163**	**0**	**202**	**0**	**104**	**0**
Principal	130	0	174	0	91	0
Interest	33	0	28	0	13	0
7. Foreign currency loans bonds (NHA)	**25**	**0**	**26**	**0**	**28**	**0**
Principal	22	0	22	0	22	0
Interest	3	0	4	0	6	0
8.FEBC/FCBC/DBC	**19**	**0**	**18**	**0**	**3**	**0**
Principal	8	0	9	0	0	0
Interest	11	0	9	0	3	0
Total	**2965**	**1300**	**3115**	**1300**	**2978**	**1300**
Principal	2054	1300	2171	1300	1869	1300
Interest	911	0	945	0	1108	0

Source: Statistics Department, State Bank of Pakistan

Eurobonds caused by increasing stock of these bonds,[12] and (2) the start of payments for rescheduled non-ODA portion[13] of the Paris club debt stock from FY08.

Thus the higher payment pressure is likely to exert upward pressure on the DS/EE ratio:

(1) If the servicing of the EDL stock adjusted for Eurobonds payments continues to grow at the same pace as the current year and;

(2) Country's export earnings do not accelerate.

If the payments for Eurobonds maturing in FY09 and FY10 along with the payments of non-ODA rescheduled debt are taken into account, the DS/EE ratio is expected to undergo a slight deterioration in the next couple of years (see **Table 6.12** and **Figure 6.22**). This pressure is however expected to ease after FY10 till the time when the Eurobonds issued in FY06 and FY07 will mature. However even after taking into account the payments for Eurobonds and the non-ODA rescheduled debt, the projected DS/EE ratio is expected to remain significantly below the peaks observed earlier.

Table 6.12: Projected Debt Servicing Burden

million US$

	Eurobond payments	Non-ODA	Adjusted debt servicing	Projected debt servicing
FY08	166.1	473.0	2829.8	3613.8
FY09	662.7	420.9	2799.1	4081.3
FY10	724.9	387.6	2768.7	4133.3
FY11	82.7	394.7	2738.6	3521.7

Source: Calculations based on data obtained from Statistics Department, State Bank of Pakistan

[12] The principal payments on the Eurobonds issued in FY05 will become due in FY09.

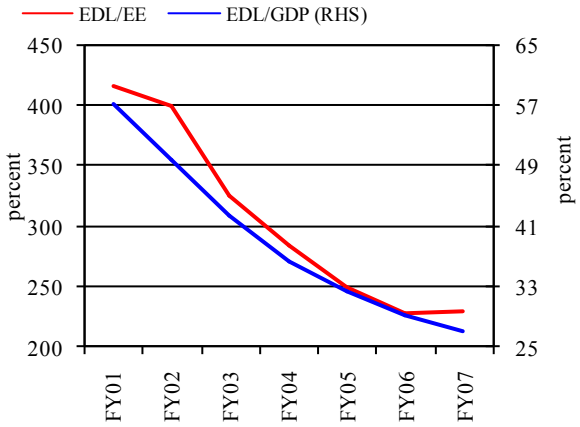
[13] The non-ODA portion comprises 28.8 percent of the total re-scheduled Paris club debt stock. These are non-concessional loans which were given a grace period of 5 years with a maturity of 23years at the time of rescheduling.

Special Section 6.1: External Debt Sustainability Analysis – Pakistan

I. Backdrop

The robust growth in the economic activity and prudent management of country's debt has significantly improved debt sustaining capacity during the past few years. This is reflected by the fall in the ratio of country's stock of external debt & liabilities (EDL) to GDP from the 57.0 percent in FY01 to 28 percent in FY07. Similarly the ratio of EDL to export earnings also witnessed an impressive fall from the level of 416 percent in FY01 to 237.4 percent in FY07 indicating higher debt repayment capacity of the country (see **Figure 6.1.1**).

Figure 6.1.1: External Debt Indicators



EDL: External Debt & Liabilities Stock; EE: Export earnings

Notwithstanding the improvement in these ratios, the sharp deterioration in country's current and fiscal account deficits during the last two years may pose threat to country's debt sustaining capacity, especially if the rise in the twin deficit continues. It may be mentioned here that financing requirements of the fiscal and current account deficit have contributed to rise in the EDL by US$ 4.3 billion over the past two years.

It would be therefore useful to assess how the country's EDL to GDP ratio would behave over the medium term in response to changes in its key determinants. To this end this section conducts debt sustainability assessment for Pakistan by finding the path of country's EDL to GDP ratio in the medium term (FY08-FY12) under various scenarios using reduced form VAR methodology[14].

II. Theoretical foundation

The basic idea for the analysis has been drawn from Wyplosz (2007)[15] who has carried out a similar debt sustainability assessment for Colombia. The identity describing the debt sustainability is the same used by the Wyplosz and the IMF i.e.,

$$b_t - b_{t-1} = (r - g)b_{t-1} - NICAB$$

Where b_t is the ratio of country's stock of EDL to GDP, r is average real interest rate on EDL stock, g is the growth rate of real GDP and *NICAB* is the ratio of country's non-interest current account balance to GDP. This identity implies that change in the stock of EDL has following determinants;

1) The budget constraint imposed on the economy by the difference between the cost of servicing debt and the rate of country's economic growth. A situation where $g > r$ for a given level of non-interest current account balance implies that economy is generating more resources to repay its stock of debt than the required real interest rate on the debt stock. In such a situation the economy can actually raise its stock of debt till a point where $r = g$, which would be the sustainable level of debt stock;

[14] For this estimation annual data is used from the period 1973 to 2007.
[15] Wyplosz Charles (2007), "Debt Sustainability Assessment: The IMF Approach and Alternatives", Graduate Institute of International Studies Geneva, HEI Working Paper No: 03/2007.

2) The balance on country's trade of goods and services (non-interest current account balance) also contributes in determining the need of external financing - a higher deficit indicates the need of higher external financing.

The debt sustainability assessment exercise involves the following steps:

Table 6.1.1: Baseline Scenario - IMF Projections

	g	r	NICAB
FY08	6.5	0.3	-2.7
FY09	6.5	0.3	-2.2
FY10	7	0.3	-2
FY11	7	0.2	-1.5

Source: IMF Country Report No. 06/426

Forming baseline scenario: A baseline scenario is constructed first for the evolution of the ratio of country's stock of EDL to GDP based on the projected values of the earlier described determinants of the change in EDL to GDP ratio. Since the projected values of these determinants are crucial to finding reasonable baseline level of EDL to GDP ratio, this analysis uses IMF projections for the path of these variables (see **Table 6.1.1)** over the next five years.[16] Pakistan's projected growth of real GDP is higher than that of the real average interest rate throughout the forecast period, indicating room for further increase in EDL to GDP ratio in the medium term.

Table 6.1.2: Stress Testing

	g	r	NICAB
Scenario - 1			
FY08	7.5	0.3	-1.9
FY09	8.0	0.7	-1.4
FY10	8.5	1.1	-0.9
FY11	9.0	1.5	-0.4
Scenario - 2			
FY08	6.5	0.3	-2.7
FY09	6.5	0.3	-1.7
FY10	7.0	0.3	-0.7
FY11	7.0	0.2	0.3
Scenario - 3			
FY08	6.5	0.3	-2.8
FY09	6.5	0.3	-3.2
FY10	6	0.3	-3.5
FY11	5.8	0.2	-4.0
Scenario - 4			
FY08	7.0	0.3	-2.7
FY09	7.0	0.3	-3.2
FY10	7.0	0.3	-3.7
FY11	7.0	0.2	-4.2

Stress testing: The next step is to conduct the main analysis by introducing various shocks that may affect these variables and hence the path of the ratio of EDL to GDP over the medium term. For this purpose the impact of shocks is studied in two stages.

Stage 1 evaluates the duration of the impact of shocks in the determinants on EDL to GDP ratio by discussing the path of impulse response functions obtained from the reduced form VAR estimation. Stage 2 forecasts the path of the EDL to GDP ratio using these VAR estimates by defining various paths for GDP growth, real average interest rate and the ratio of non interest current account balance to GDP in the medium term.

Scenario 1 – all variables improve by one quarter standard deviation over the period from FY08 to FY11 (see **Table 6.1.2**). The average real interest rate however will increase by one eighth standard deviation, since after the re-profiling of the stock of country's stock of EDL the real average interest rate is not likely to rise steeply in the medium term.

Scenario 2 – all variables except non-interest current account balance follow the path projected by the IMF. The non-interest current account balance for FY08 is given a value based on current year's (FY07) trend. For the period form FY09 to FY11 this variable improves by one half standard deviations from its FY08 value (see **Table 6.1.2**).

Scenario 3 – the average real interest rate follows the path projected by IMF, however GDP growth and the non-interest current account balance deteriorate from FY08 to FY11.

[16] IMF country report on Pakistan, December 2006

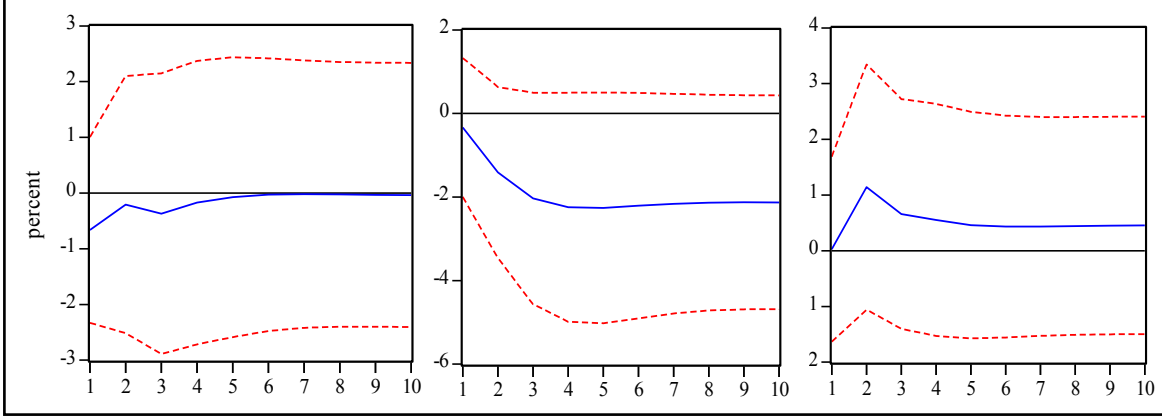
Scenario 4 – the average real interest rate stays at the level projected by IMF, and the country manages to maintain the level of GDP growth at 7 percent in the medium term while its non-interest current account balance continues to deteriorate (see **Table 6.1.2**).

IV. Results

Stage 1

A positive exogenous shock in GDP growth given that no exogenous shock occurred in non-interest current account balance and the real average interest rate will lead the accumulated response of the EDL to GDP ratio to rise till the sixth period (see **Figure 6.1.2**). The impact of the shock fades away after that.

Figure 6.1.2: Accumulated Impulse Responses of Δ EDL to GDP Ratio



The accumulated response of EDL to GDP ratio to a positive exogenous shock in non-interest current account balance, given the shock in GDP growth has already occurred, is negative. This implies that a rise in GDP growth along with an improvement in non-interest current account balance to GDP ratio will lead EDL to GDP ratio to fall till the sixth period after which it starts rising very slightly and then stabilizes. Thus a fall in country's current account deficit is likely to cause a fall in the EDL to GDP ratio despite a rise in GDP.

Finally the accumulated response of the EDL to GDP ratio to a positive shock in real average interest rate given the shock in GDP growth and non-interest current account balance have already occurred, is positive. The EDL to GDP ratio initially rises steeply, before falling in the third period and almost completely stabilizing in the 6th period.

This analysis thus shows that shocks in the GDP growth, real average interest rate and non-interest current account balance have a medium term impact on country's EDL to GDP ratio.

Stage 2:

On the basis of the VAR estimates the projected values of the stock of EDL to GDP ratio under various scenarios described above are shown in **Figure 6.1.3**.

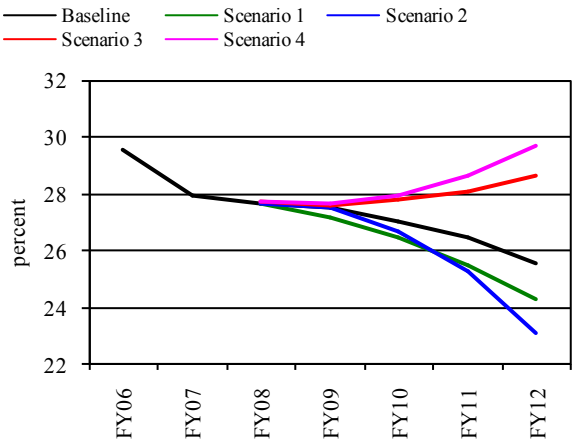
Scenario 1: leads the EDL to GDP ratio to fall to the level of 24 percent in FY12 from the projected value of 27 percent in FY08. This implies that in case of a strong GDP growth and improvement in the non-interest current account to GDP ratio, the EDL to GDP ratio is expected to follow a downward path.

Scenario 2: gives a slightly high EDL to GDP ratio than in scenario 1 till FY10 if GDP growth stays at the level projected by IMF and the non-interest current account balance deteriorates. However an improvement in these variables from FY10 will cause the ratio of EDL to GDP to follow a downward path in the remaining forecast period.

Scenario 3: A fall in the GDP growth and deterioration in its non-interest current account balance would increase country's EDL to GDP ratio over the period of next five years

Scenario 4: results in a still higher level of EDL to GDP ratio over the medium term because of a substantially higher level of non-interest current balance.

Figure 6.1.3: Medium Term Path of EDL to GDP Ratio



V. Conclusion:

Following points can be concluded from this analysis

These results of the debt sustainability exercise show that in number of possible scenarios in which the major determinants of EDL to GDP ratio may move in the medium term, country's EDL to GDP ratio is expected to remain within manageable limits. In no instance did its value rise above 29.7 percent which is far below the levels country was witnessing when it had to manage a debt re-profiling from the Paris club creditors.

The exercise, however, does indicate possibility of a rise in the EDL to GDP ratio in case country's non-interest current account deficit deteriorates. Scenarios 3 and 4 in fact show that the ratio of EDL to GDP is likely to rise with deterioration in country's current account deficit irrespective of the GDP growth rate. Furthermore, the results of impulse response function indicate that the impact of deterioration in non-interest current account balance to GDP ratio on EDL to GDP ratio can occur in the medium term. The analysis therefore highlights the need for controlling country's current account deficit to keep external financing pressure at sustainable level.